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(54) Title: MODULATION OF CELL DEATH

(57) Abstract: A method of modulating cell death includes administering pyridoxal-5'-phosphate, pyridoxal, pyridoxine, pyridoxamine, 3-acylated analogues of pyridoxal, 3-acylated analogues of pyridoxal-4,5-aminal, pyridoxine phosphonate analogues, or pharmaceutical compositions thereof.

WO 2004/084895 A3

INTERNATIONAL SEARCH REPORT

International Application No
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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61K31/4415 A61K31/4355 A61K31/675 A61P39/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A61K A61P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data, CHEM ABS Data, BIOSIS, EMBASE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 00/57863 A (UNIV MANITOBA ; MEDICURE INC (CA)) 5 October 2000 (2000-10-05) abstract; claims 9-14; tables 10-13 -----	1
X	WO 01/03682 A (MEDICURE INC) 18 January 2001 (2001-01-18) abstract; claims 1-72; examples 1-10 -----	1
X	EP 0 282 696 A (SPECK ULRICH) 21 September 1988 (1988-09-21) abstract column 4, line 45 - column 6, line 29; claims 1-6 ----- -/-	1

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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- "O" document referring to an oral disclosure, use, exhibition or other means
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Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

International Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 339 085 B1 (HAQUE WASIMUL ET AL) 15 January 2002 (2002-01-15) abstract column 4, line 53 - column 5, line 56 column 6, line 36 - column 10, line 32 column 11, line 48 - column 12, line 2; claims 31,56; examples 2-9 -----	1
X	WO 98/32429 A (GALLAGHER JAMES ANTHONY ; UNIV LIVERPOOL (GB); BOWLER WAYNE BARRY (GB)) 30 July 1998 (1998-07-30) abstract; claims 1,6,12 -----	1
X	DATABASE WPI Section Ch, Week 199425 Derwent Publications Ltd., London, GB; Class B05, AN 1994-207332 XP002291398 & SU 1 808 326 A1 (RYAZAN MED INST) 15 April 1993 (1993-04-15) abstract -----	1
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X	WO 00/53606 A (MEDICURE INC) 14 September 2000 (2000-09-14) abstract page 3, line 11 - page 5, line 30 page 8, lines 1-4 page 18, lines 2-13; claims 50,107; examples 1-9 -----	1
X	GENG M Y ET AL: "Protective effects of pyridoxal phosphate against glucose deprivation-induced damage in cultured hippocampal neurons." JOURNAL OF NEUROCHEMISTRY. JUN 1997, vol. 68, no. 6, June 1997 (1997-06), pages 2500-2506, XP001197371 ISSN: 0022-3042 the whole document ----- -/--	1

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB2004/000899

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE CHEMABS [Online] CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; SAWAKI, SHUNJI ET AL: "Effect of pyridoxal phosphate administration on hepatitis C virus RNA in patients with hepatitis type C" XP002291396 retrieved from STN Database accession no. 1997:732628 abstract & IGAKU TO SEIBUTSUGAKU , 135(4), 149-151 CODEN: IGSBAL; ISSN: 0019-1604, 1997, XP008033478</p>	1
X	<p>----- DATABASE CHEMABS [Online] CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; SAWAKI, SHUNJI ET AL: "Effect of pyridoxal phosphate on the CD4, CD8 T cell and HCV-RNA in patients with hepatitis type C" XP002291397 retrieved from STN Database accession no. 1998:406378 abstract & IGAKU TO SEIBUTSUGAKU , 136(5), 143-145 CODEN: IGSBAL; ISSN: 0019-1604, 1998, XP008033477</p>	1
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X	<p>----- EP 0 379 936 A (VESTA MED PTY LTD) 1 August 1990 (1990-08-01) abstract page 3, lines 44-56 page 9, lines 45-55 page 10, line 26 - page 12, line 45; claim 9; example 4</p> <p>----- -/--</p>	1

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB2004/000899

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>ISHAQUE A ET AL: "Role of vitamins in determining apoptosis and extent of suppression by bcl-2 during hybridoma cell culture"</p> <p>APOPTOSIS, vol. 7, no. 3, June 2002 (2002-06), pages 231-239, XP008033442 ISSN: 1360-8185 the whole document</p> <p>-----</p>	1
P,X	<p>NAMAZI, M. R.: "Pyridoxal 5'-phosphate as a novel weapon against autoimmunity and transplant rejection"</p> <p>FASEB JOURNAL , 17(15), 2184-2186 CODEN: FAJOEC; ISSN: 0892-6638, 2003, XP008033485 the whole document</p> <p>-----</p>	1

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2004/000899

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

Although claim 1 is directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1 (partially)

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claim: 1 (partially)

Use of pyridoxal-5'-phosphate for modulating cell death.

2. claim: 1 (partially)

Use of pyridoxic acid for modulating cell death.

3. claim: 1 (partially)

Use of pyridoxal for modulating cell death.

4. claim: 1 (partially)

Use of pyridoxine for modulating cell death.

5. claim: 1 (partially)

Use of pyridoxamine for modulating cell death.

6. claims: 2-10

Use of a compound of the formula of claim 2 for modulating cell death.

7. claims: 11-25

Use of a compound of the formula of claim 11 for modulating cell death.

8. claims: 26-33

Use of a compound of the formula of claim 26 for modulating cell death.

9. claims: 34-40

Use of a compound of the formula of claim 34 for modulating cell death.

10. claims: 41-49

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Use of a compound of the formula of claim 49 for modulating
cell death.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IB2004/000899

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Information on patent family members

International Application No

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